

REMARKS/ARGUMENTS

This Amendment is in response to the Office Action dated October 5, 2004. Claims 1-18 are pending. Claims 1-18 are rejected. Accordingly, claims 1-18 remain pending in the present application.

The Present Invention

It is an objective of the invention to provide a compact electronic device and a process of manufacturing the compact electronic device, which can reduce production costs, simplify manufacturing procedures, and improve production yield.

It is another objective of the invention to provide a compact electronic device and a process of manufacturing the compact electronic device, which can provide multi-functionality, good electrical properties and high-speed operation for the compact electronic device.

The complete encapsulation of the substrate to seal the device, such as the semiconductor chip and the passive component, with the molding compound renders the manufacture process simpler and reduces the manufacturing cost. This contrasts with the prior art that requires both the molding compound and the addition of a shell to respectively cover the semiconductor chip and the substrate. The invention therefore allows for mass production and a reduction of the package thickness. Furthermore, the chip stack is easily achieved to provide the compact electronic device with multi-functionality, good electrical properties and high-speed operation. The entire substrate surface can be used for mounting with the semiconductor chip and the passive component, providing better trace routability with more room for layout design.

Claim Rejections 35 USC 102

The Examiner states,

Claims 1-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Bolken US 6,444,501.

Bolken discloses a multimedia card and method of making including providing a substrate (12) having a first and second opposite surfaces, wherein at least one semiconductor chip (14) and at least one passive component (13) are mounted on and electrically connected (104) to the first surface of the substrate, and a plurality of terminals (24) are formed on the second surface and exposed outside to serve as input/output connections for the device, and performing an encapsulation process to form an encapsulation body (26) on the first surface of the substrate for integrally encapsulating the chip and the passive component (see figs. 3, 5-6 and related text). Bolken also discloses that various types of materials and components may be used in the device which are known in the art.

Bolken (U.S. Patent No. 6,444,501) discloses a method for making multimedia card, including: providing a substrate having a first and second opposite surfaces, wherein at least one semiconductor chip and at least one passive component are mounted on and electrically connected to the first surface of the substrate, and a plurality of terminals are formed on the second surface and exposed outside to serve as input/output connections for the device, and performing an encapsulation process to form an encapsulation body on the first surface of the substrate for integrally encapsulating the chip and the passive component. However, for performing the encapsulation process, Bolken discloses a first plastic casting being molded to the substrate to encapsulate the semiconductor components while leaving a peripheral portion of the substrate uncovered, and then a second plastic casting being molded to the peripheral portion to abut the first plastic casting and form the card periphery.

Contrary to Bolken, the encapsulation process of independent claims 1, 7 and 12 recites forming an encapsulation body on the first surface of the substrate for integrally encapsulating the chip and the passive component. In other words, only one casting step is necessary for forming said integral encapsulation body.

An electronic device formed with two-stepped encapsulation body has **many** drawbacks, for example, process time consuming; requiring two sets of casting molds, moisture permeating into the boundary between the two encapsulation bodies, etc., while the electronic device formed with an integral encapsulation body taught by the present invention can be free from these drawbacks.

Since the cited prior art does not teach or suggest Applicant's inventive feature as discussed above, it is respectfully submitted that the present invention are patentable over Bolken. Therefore, the cited prior art does not anticipate or otherwise render obvious Applicant's claimed invention.

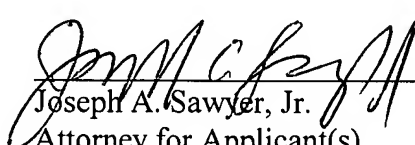
Accordingly, Applicant respectfully submits that independent claims 1, 7 and 12 are allowable for the above-identified reasons. In addition, claims 2-6, 8-11 and 13-18 are allowable since they depend from allowable base claims. Accordingly, Applicant requests reconsideration and allowance of the claims 1-18 as now presented.

Applicants' attorney believes this application in condition for allowance. Should any unresolved issues remain, Examiner is invited to call Applicants' attorney at the telephone number indicated below.

Respectfully submitted,
SAWYER LAW GROUP LLP

January 4, 2005

Date


Joseph A. Sawyer, Jr.
Attorney for Applicant(s)
Reg. No. 30,801
(650) 493-4540